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Patterns In Clause, Sentence, and Discourse

in selected languages of India and Nepal

Part I, Sentence and Discourse

SUMMER INSTITUTE OF LI

Ronald L. Trail
Summer Institute of Linguistics
Institute of Nepal and Asiatic Studies
Tribhuvan University
Kathmandu, Nepal.

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Gordon and Pike have reversed this order in their paper on Dhangar-
ux by studying discourse structure via a heuristic known as sentence
ersal. The beauty of this approach is that it studies linguistic
ts in context and hence the language assistant is perfectly at home
giving judgments about whether certain sentences or groups of sen-
ces can be reversed and if so what adjustments are required to make
change. The method is based on the assumption that the language
istant will only reverse units which are in some way complete in
nselves. By starting with sentence size units, the linguist not only
:overs much of the structure of paragraph and discourse begins to
)ld as well.

Semantic Relations Between Whole Propositions In English

Ronald L. Trail

Purpose and Scope. We would like to discuss briefly in this paper: 1) the place of sentence (as opposed to clause) in the grammatical hierarchy; 2) the need for sentence as an area of study in its own right; 3) sentence viewed as the domain of relationships between whole propositions; and 4) the relationship of surface to deep structure in sentence.

A. The Place of Sentence in the Grammatical Hierarchy.

In current Tagmemic thought, Sentence and Clause are viewed as separate levels in the grammatical hierarchy. Clause is viewed as the domain of what in logic is known as predicate calculus, whereas Sentence is viewed as the parallel to formal logic's statement calculus. Clause is a verb-centered construction surrounded by certain nuclear (obligatory) constituents which strictly subcategorize it. Sentence, on the other hand, is a level characterized by clause combination--that is, clauses joined by such connectors as and, but, or, if...then, and the like.

We recognize that the relationships which separate these two putative levels are genuinely different. What we wish to query is, Do these differences qualify to separate clause and sentence as two separate grammatical levels, or should they be rather viewed as two components of a single level? We wish to defend the latter choice particularly from analogy to phrase level.

We would like to point out at the outset that although some of the relationships seen on sentence level are peculiar to that level (as opposed to levels below it)--particularly cause-effect relationships--others have already been encountered on phrase level. These are: coordination, alternation, antithesis, generic-specific, and perhaps others. They are illustrated as follows:

Coordination:	men and women
Alternation:	men or women
Antithesis:	men but not women

Generic-Specific: It was black, pitch black outside.

The interesting point to observe here is that although these relationships occur between phrases, there has been no great pressure to posit a separate level of phrase combination as such. Yet when such relationships are seen between clauses, we are quick to posit a separate level which we call sentence, and to blithely admit that sentence is a level of clause combination. It is this similarity between clause and phrase, but yet the dissimilarity with which they are treated that we wish to highlight. Would it not be more logical to treat the two alike and to say that we have phrase as a separate level within which there are a finite set of basic, simple, or primary phrase types, and then that there are ways of combining these types into larger combined units; and similarly that we have clause (or sentence—whatever we call it) as a single level within which there are basic types characterized as verb-centered constructions, and then that there are ways of combining these into larger units? So within each level (phrase and clause) we would have two components--a basic-type component and a combined-type component. Admittedly clause combination is a bit more extensive than phrase combination, but the parallel is still there. If such a course were taken it would be best to call the level 'sentence' since that term has more universal coinage. We could then call what is now the domain of clause, 'simple sentence,' and what is now the domain of sentence, 'complex or composite sentence.' This would allow us to focus on simple sentence as the domain of verb subcategorization and on complex sentence as the domain of sentence embellishment and combination. By sentence embellishment we mean peripheral modifiers such as introducers, outer locatives and temporals (note that the latter two have fluctuated between clause and sentence in recent analyses), and other discourse related tagmemes.

Longacre (1968, Vol. I, p. xx) ably defends the uniting of phrase and a putative phrase cluster level, as a single level. He does this by showing that primary exponence of clause level tagmemes requires that they be filled by units from the next level down the hierarchy, that is, from this putative phrase cluster level; but that in actual fact simple phrases are far more common as exponents of clause tagmemes than are phrase clusters. He could have gone on to reason that simple phrases and phrase clusters have identical distribution and therefore need to be considered a single level.

Now if we reasoned similarly to this about clause (simple sentence) and sentence (complex sentence) we should be able to say that primary exponence would require that paragraph tagmemes be filled more commonly by sentences (complex sentence) than by clauses (simple sentences). We do not think that this is true. Both simple sentences and complex sentences have this in common that they make assertions—the former does it simply; the latter by attaching conditions and concessions or by combining two into one assertion. We would like to put forward the claim that simple sentences (simple assertions) fill paragraph level slots as typically as do complex sentences (complex assertions) and that therefore

clause and sentence should be joined into one single grammatical lev

Note that running through the argument above is the premise tha level is constituted of units which have identical or similar distri tion. Therefore because combined phrases have the same distribution simple phrases, we posit a single phrase level. Similarly, because plex sentences and simple sentences have the same distribution (that in paragraph slots) we posit a single level of sentence. Figure 1 b low is a chart of our suggested view of sentence and phrase in the g matical hierarchy accompanied by the corresponding semantic terminol

Level \ Number of Units		Single	Two or more
Sentence	Grammatical	Simple Sentence 'I ran.'	Complex Sentence 'I ran but she walked.'
	Semantic	Proposition	Paired Propositions
Phrase	Grammatical	Simple Phrase 'the red ball'	Complex Phrase 'the red ball and the white one'
	Semantic	Term	Paired Terms

Figure 1. Suggested Hierarchical View of Sentence and Phrase.

The above observations, however, have not been incorporated int papers of this volume. They are all written from the point of view clause and sentence are separate levels, and that sentence is the do of clause combination.

B. Is the Study of Sentence Well Motivated?

In answer to the second question—Why do we need the sentence i English grammar?--we would like to present the following two exercis and from them draw support for the need for sentence in English disc It was suggested to me by Austin Hale that a good heuristic for dete mining the function of a grammatical unit is to try to function wit it. We have therefore taken a paragraph from an article in the Feb 12, 1973 issue of Time entitled, "Deke's Comeback," and attempted tc tell it using no sentential connectors such as: and, but, or, if, al though, when, before, after, and the like. If our guess is correct, should not be able to retell the story with the same ease and poigna

of style as the original. The original we present as is in the column on the left; our revised version on the right.

Original	Revised
"It was a day that Donald K. ('Deke') Slayton would never forget. On March 15, 1962, only two months before the taciturn astronaut was scheduled to become the second American to orbit the earth, NASA doctors abruptly grounded him. Reason: they had discovered an occasional irregularity in the rhythm of his heartbeat. The bitterly disappointed Slayton subsequently became chief of flight-crew operations at the Manned Spacecraft Center and played a key role in picking all future space crews, including the first men to land on the moon. But even as he sent other astronauts to the launch pad, he never stopped dreaming of making the trip into space himself."	It was a day that Donald K. ("Deke") Slayton would never forget. He was grounded abruptly on March 15, 1962 by NASA doctors. Only two months later the taciturn astronaut was scheduled to have become the second American to orbit the earth. Yes, they had grounded him. Reason: they had discovered an occasional irregularity in the rhythm of his heartbeat. The bitterly disappointed Slayton subsequently became chief of flight-crew operations at the Manned Spacecraft Center. He played a key role in picking all future space crews, including the first men to land on the moon. Meanwhile, he continued to dream of making the trip into space himself.

1) The first sentence can pass as it is, since the that-clause is modifying merely the term day of the sentence and not the sentence as a whole. We consider this a relationship between a whole proposition and a part proposition (as will be seen later) and not between two whole propositions. This relationship is therefore beyond our purview.

2) The second sentence—beginning, "On March 15, 1962..."—immediately gives us trouble since it is composed of two propositions in reverse temporal sequence. It is reverse because the "grounding" occurs before his scheduled orbit, but is mentioned after the orbit. A confusing factor is that the time that he was actually scheduled, that is, selected, and the time he was to actually orbit are not the same. We use the latter as the intended time reference since it makes sense with the word "before" of the original. Otherwise, the "grounding" took place after the scheduling or selecting and this does not match with the intended sense of the original. We attempt to adjust the relationship without the relator "before" as follows:

a) Previous to this the taciturn astronaut had been scheduled in just two months to become the second American to orbit the earth. Now, on March 15, 1962, NASA doctors had abruptly grounded him.

This attempt keeps the two events in their original chronological order in past time. The sequence is signaled by the words, "previous to this" and "now." One evident problem with this is that it makes a very poor connection with the topic sentence. This is because the topic sentence makes an indefinite reference to a certain "day" and our sentence refers to it as though it were a definite reference. The day does not become definite as March 15, 1962, until our second sentence. It does, however, make an easy transition to the following sentence since the original order has been preserved.

b) He was grounded abruptly on March 15, 1962 by NASA doctors. Only two months later the taciturn astronaut was scheduled to have become the second American to orbit the earth.

This attempt puts the two events in their correct chronological order which it accomplishes by the word "later" plus the verb phrase, "was scheduled to have become." Although this makes a fairly good connection with the topic sentence, the second sentence is a bit awkward. The second sentence also does not make a good transition to the beginning word (reason) of the third, and therefore requires a short summary sentence to make up for this, namely, "Yes, they had grounded him." Another criticism which will recur is that the single proposition sentences lack the style and flavor of the original and tend to be matter-of-fact and prosaic. When the original and our two attempted revisions of sentences two were read to several others, they unanimously favored the original.

3) The third sentence is all right as it is, except notice that the proposition needs to be labeled as reason. Otherwise a more wooden, "This was because..." would have to be resorted to. If we were to rule out this use of the word "reason" on the grounds that it is a sentential connector, we might not be able to adjust the relationship satisfactorily. In fact, cause-effect relationships are very difficult to express without using relators such as: because, if, so, although, and therefore.

4) Sentence 4 is an Additive or Conjoined sentence which is easily divided into two by deleting the conjunction "and" and repeating the Subject by means of a pronoun in the second proposition. This is a perfectly acceptable adjustment and at first glance, seemingly little is lost in the process. However, note that without the conjunction the style is choppy and lacks the free flow of the original. Another function of and is brought out by its absence—and permits a sequential and/or cause-effect relationship between its propositions. Slayton's becoming chief of flight-crew operations was certainly prior in time to, and the cause of his playing a key role in picking future space crews. Without the and however, the two propositions are simply events which may or may not be related. It is therefore interesting to see that although the primary function of and is to conjoin similar events, these secondary sequential and/or cause-effect functions are implied as well.

5) Sentence five is a Concessive or Antithetical sentence—"But

even as he sent other astronauts to the launch pad, he never stopped dreaming of making the trip into space himself." This but has at least three functions. Placed at the beginning of the sentence it signals a contrast with what has gone before--in this case the previous sentence. It also permits a summarizing of the event with which it contrasts, namely, "...even as he sent other astronauts to the launch pad..." Finally it functions as a contraexpectation signal indicating to the reader that something counter to the normal expectancy patterns should be anticipated. Now to capture these three functions without the signal is difficult. The following are two attempts:

a) Meanwhile, he continued to dream of making the trip into space himself.

This lack the summary function and puts the burden of contrast on the emphatic he, himself as against those he sent. It completely misses the counter-expectancy component signaled by but.

b) Like this he sent many other astronauts to the launch pad. However, he never stopped dreaming of making the trip into space himself.

This attempt captures the summary function by virtue of the anaphoric phrase, like this. It also retains the contrast and contraexpectancy components by means of the synonomous however. This may have been cheating a bit since it may be only punctuation that separates our sentences now. At any rate one can see that it would be very difficult to express the concept of contraexpectancy without using a connecting signal of some kind.

So in just briefly analyzing a paragraph of English prose we can begin to see that the study of sentence is well motivated. We have been very hard put to function without paired propositional sentences. In two places we had to indicate the relationship between two propositions either by actually naming it in the case of "reason," or by using a synonym in the case of "however" for "but." Our paragraph lost style and free flow and became prosaic, stilted, and choppy. In some places we lost components of meaning, as for example when we had to function without "and" and "but." And we noted that the function of and is not simply to conjoin, but also to signal sequence and/or a cause-effect relationship.

Another test was done on two different discourse types to see what sentence types formed their basic structure. Both discourses were articles from the June 1972 issue of Reader's Digest. One was a Narrative discourse entitled, "Little Boy Lost in the Rockies," by Edward Fales, and the other an Expository-Procedural discourse entitled, "Straight Talk About Good Posture," by Warren Young. Assuming that there is a correlation between types of relationships between propositions and types of relationships between paragraphs in discourse, we went through the articles noting these relationships. The first time through the articles was to identify the relationships between the last sentence of a paragraph and the first sentence of the next paragraph. We felt that this would give us a rough indication of the relationships between paragraphs. The second time through the articles we merely counted the different types of paired-propositional sentences in each discourse (assuming that a certain discourse type would per force have more relationships of one kind than another). We present the results of this study in Figures 2-4 by simply listing the types of relationships and beneath them the number of times that particular relationship occurred in the discourse. After we have shown the results of the two kinds of relationships mentioned above, we combine them in a third chart (Figure 4).

Discourse Type \ Relationship	Coord	Temp	Gen-Sp	C-E	Manner	Anti	Loc	Att
Narrative	3	20	1	0	2	2	1	0
Expository-Procedural	7	1	11	6	0	1	0	1

Figure 2. Relationships Between Paragraph Final Sentences and Paragraph Initial Sentences.

Discourse Type \ Relationship	Coord	Temp	Gen-Sp	C-E	Manner	Anti	Alt
Narrative	11	14	1	4	11	3	1
Expository-Procedural	15	3	2	13	8	0	1

Figure 3. Relationships Between Paired Whole Propositions.

It is interesting to note the heavy reliance in Narrative on temporal relationships. This fact brings us to see that temporal relationships are extremely important in Narrative discourse and may in fact form its basic structure or backbone. The comparatively heavy emphasis on Manner relationships is also to be expected in this type of discourse in order to facilitate description. In Expository-Procedural discourse on the other hand, temporal relationships are little used whereas there is heavy emphasis on Coordinate, Cause-Effect, and Generic-Specific. We would conclude that these tend to form the basic structure of Expository-Procedural discourse.

Relationship / Discourse Type	Coord	Temp	Gen–Sp	C–E	Manner	Anti	Loc	Alt	Att
Narrative	14	34	2	4	13	4	1	1	0
Expository–Procedural	22	4	13	19	8	1	0	1	1

Figure 4. Combined Relationships of Figures 2 and 3.

Notice, however, that one discourse genre does not completely rule out the use of a particular relationship which does not form part of its basic structure or backbone. But where a temporal relationship (sequential or concurrent) is used in Expository-Procedural discourse, it contributes to it as supportive or collateral information. For example, in the discourse on Posture, the subject of good posture is introduced and expounded upon and no time line is developed because the material is subject oriented. However, when the point is made that posture could effect one's career, a success story is told in which a woman, having corrected her posture, goes on to a highly successful career. Within the story then a time line is developed, but the story merely plays a supportive role to the larger exposition.

Similarly, such relationships as cause-effect, antithetical, and alternative do not form the backbone of Narrative discourse, but are nevertheless used in Narrative as collateral material to give participant attitudes or accompanying description. For example, in the story, "Little Boy Lost in the Rockies," the time line proceeds from a bit before Keven Dye is lost until he is finally found and the story unfolds around that time line. As descriptive information is brought in, it comes via relationships other than sequential. Note in the following quote both the Antithetical and Alternative constructions: "They'd called out, they told Sheriff Estes, but he always ran on. Sometimes on craggy ridges he'd appear for an instant against the sky. He'd snatch food left for birds. At night, he'd break into cabins, steal peanut butter or raid dust-bins." (Underlining ours).

The time line, on the other hand, is carried on by such temporal phrases as, "An hour earlier, At breakfast, On Wednesday, The next day," and by such temporal clauses as, "When Phillip's enquiries and a search of the tree house failed to locate Kevin," and "...when he glanced towards the water again..."

The expository part of the Expository-Procedural discourse is developed by such Generic-Specific relationships as: "Posture is so basic to the human condition that we all rely upon it to make instant judgments of others. (Specifically) A slumping figure betrays advancing age, and nothing signals to us that someone is a 'loser' more surely than a defeated slouch;" and "The mechanics of balancing our bodies against the ever tugging pull of gravity--which is what posture is all about--are more complicated than you may imagine. (Specifically) Good posture has never been more vital, both psychologically and physically, than in today's tense, push-button sit-down world." It is also developed by such cause-effect relationships as: "Since good posture is something you achieve with your body, you must learn it in your body and not just in your mind;" and, "To keep good posture after you have found it, you need to get fit and stay fit with sensible exercise."

In the procedural part of the Expository-Procedural discourse, we notice such sequential or concurrent relationships as: "Now, keeping your back and head flat against the wall, slowly move your feet back to the wall and straighten your legs until you are in a standing position. Finally, walk round the room, maintaining the same posture; then place your back against the wall again to see if you have held the right position."

So to sum up, we have seen how discourse tends to lose style and structure when sentences as paired whole propositions are substituted by simple sentences. Further we have seen how certain relationships between propositions (and between paragraphs) function to form the basic structure or backbone of certain discourse genre. Thus we can conclude that even with this minimal study, the investigation of sentence is well motivated.

C. Semantic Relationships Between Whole Propositions.

Semantic Categories. We move then to a study of relationships between whole propositions. Statement calculus of formal logic posits five basic relationships which can exist between what it terms "prime sentences." These it defines (Stoll, 1961, p. 161) as, "...sentences which either contain no connectives or, by choice, are regarded as 'indivisible'." These five relationships are:

a) Negation: $A, \neg A$ (A, not A).
Derek is a carpenter; Derek is not a carpenter.

b) Conjunction: $A \wedge B$ (A and/but B).
He ran but she walked.

c) Disjunction: $A \vee B$ (A or B).
He is either eating or he is sleeping.

d) Conditional: $A \rightarrow B$ (if A, then B).
If you don't study you will fail your exam.

e) Biconditional: $A \leftrightarrow B$ (A if and only if B), or (if A, then B, and if B, then A).

He will sing if and only if she plays the piano; or
He will sing if she will play the piano and vice versa.

We will call these respectively, Negation, Conjunction, Disjunction, Cause-Effect, and Biconditional. We will use only b, c, and d as semantic domains in our outline of the semantic sentential relationships of English. We cannot use Negation partly because it is not a propositional relationship in the same category with the others, and partly because it is subsumed under Disjunction--Derek is a carpenter or he is not a carpenter. Biconditional as well does not seem to be a productive relationship but rather a subtype of the Cause-Effect relationship.

Semantically we wish to call prime sentences, propositions. By a proposition we mean a single event or state with its modifying nuclear roles. These roles may be events or states in themselves. Other events or states may be included in the proposition provided that they are functioning to modify the roles of either the main event or state or the roles of modifying events or states. (Propositions in deep structure correspond to clauses in surface structure.)

We focus in this paper (and generally in the included sentence papers) on relationships existing between only whole propositions as the domain of sentence, and not on the relationships existing between whole and part propositions. By the latter we mean, for example, the relationships between verbs of cognition and speech and their sentential complements.

1) He said he was going downtown.

2) I know who your father is.

Nor are we focussing on relationships which exist between expletive "it" and its antecedents such as:

3) It is a fact that all such optimism is misplaced.

We are focussing rather on relationships which can exist between whole propositions. We assume that only one single primary relationship exists in any one sentence. Secondary relationships may also exist but are not in focus in the mind of the speaker (unless he is punning and this domain is beyond the purview of our paper). To take an illustration from Robin Lakoff (1971, p. 127):

4) The police came into the room and everyone swallowed their cigarettes.

The primary relationship between the two propositions is a temporal (sequential) one--the sentence being taken from a Narrative discourse. As Robin Lakoff has pointed out, this <u>and</u> also encodes cause-effect (the police's coming caused the swallowing of the cigarettes). But we maintain that the cause-effect relationship is not in focus in the mind of the narrator. He is simply story telling and sequence in time is in

focus. So we claim sequence to be primary, and cause-effect to be secondary based on the larger discourse context in which the sentence is found.

Secondary relationships may also exist alongside of a primary relationship as long as they are functioning to modify one of the propositions involved in the primary relationship. Example 5 is an illustratio of this where the <u>but</u> signals a secondary relationship modifying the Result of a Reason-Result sentence.

<u>Ranking of Relationships</u>. Within any sentence in which there are several relationships encoded, we claim that only one is primary or dominant and that others, if any, play a subsidiary role to it. For the answer as to which relationship is primary, we turn again to statement calculus for our clue which posits that cause-effect relationships take precedence over all other relationships. I quote from Robert Stoll (1961, p. 163), "We agree that $\longleftrightarrow$ is the strongest connective (that is, it is to encompass most), and then follows $\longrightarrow$. Next in order are $\wedge$ and $\vee$, which are assigned equal strength, and then follows $\neg$, the weakest connective." By and large we agree with this statement, however, when <u>but</u> ($\wedge$) involves contraexpectancy, we hold that it outranks both <u>and</u> ($\wedge$) and <u>or</u> ($\vee$). This exception may stem from the fact that contraexpectancy involves cause-effect or expectancy patterns.

Given then the following sentence in which both a cause-effect and a conjunctive (antithetical) relationship are encoded, we are bound to give precedence to the cause-effect relationship. (Examples 5-7 are all from Longacre 1968, Vol. II, p. 6.)

5) Because water is scarce some take sponge baths but others have stopped bathing entirely.

The basic relationship here is therefore cause-effect with an antithetical relationship embedded in the effect proposition, and <u>not</u> an antithetical sentence with a cause margin. We label the sentence therefore a Reason-Result sentence.

The question then arises as to which relationship is primary if a certain sentence contains two cause-effect relationships. The rule that we posit for this situation is that the relationship which is stated first is primary. Note Example 6.

6) In order to save water he would have gone without bathing entirely if she had been content with a sponge bath.

In this sentence both a Purpose-Result relationship (in order to save water he would have gone without bathing entirely), and a Contrafactual relationship (he would have gone without bathing entirely if she had been content with a sponge bath) are encoded. Which one dominates the sentence or is primary? According to our rule we must label it a Purpose-Result sentence since that relationship is stated first. We there-

fore classify it as a Purpose-Result sentence with a Contrafactual sentence embedded in the Result proposition.

We also posit that temporal relationships (sequential or simultaneous) if they apply equally to both propositions of a preceding or following paired propositional relationship outrank the relationship of the propositional pair if it is conjunctive or disjunctive.

7) When water is scarce some take sponge baths but others stop bathing entirely.

8) When water is scarce we either take sponge baths or go without bathing entirely.

We therefore label Examples 7 and 8 Sequential sentences, 7 having a conjunctive (antithetical) relationship embedded in the second proposition, and 8 having a disjunctive (alternative) relationship embedded in its second proposition. Note that the two sentences although seeming to be Simultaneous relationships, are really Sequential (bordering on cause-effect), the condition of scarce water having to prevail before people begin to take sponge baths. Note also that the when is a close synonym for if in these sentences. (Examples 5-7 are all analyzed conversely to our analysis by Longacre who names them respectively: Antithetical Sentence with preposed Causal Margin; Contrary-to-fact Condition with preposed Purpose Margin; and Antithetical Sentence with preposed Time Margin.)

Finally we hold that but, when involving the meaning component contraexpectancy, outranks contrastive but, and, and or. This may be because contraexpectancy involves cause-effect expectancy patterns and these outrank other relationships.

9) She had fish and chips and he had a steak, but neither of them enjoyed the dinner.

10) John is either reading or he is relaxing but you may see him.

Both sentences we label Antithetical--Example 9 has an Additive sentence embedded in the first proposition while Example 10 has an Alternative sentence embedded in the first proposition. (Note that it is probably more accurate to say that the embedded sentence in 9 is Contrast rather than Additive.)

In summary then we have posited the following four rules to determine the primary relationship in a sentence.

a) The cause-effect relationship outranks all other relationships.

b) If two or more cause-effect relationships are present in a single sentence, the relationship stated first outranks the others.

c) Temporal relationships, if they apply equally to both propositions of a preceding or following conjunctive or disjunctive relationship, outrank that relationship.

d) But when involving the meaning component of contraexpectancy, outranks and, or, and contrastive but.

One final note needs to be made about relationships. Some relationships require two and only two propositions, others permit more than two. However we still hold that only one primary relationship can be permitted per sentence. Disjunctive (not with excluded middle) is a relationship which permits several propositions but whose primary relationship of choice among them remains singular.

Semantic Tree. Given then the relationships which exist between whole propositions, we have attempted to put them into a system and present them in the form of a tree diagram. All sentential relationships can be subsumed under the three logical headings of Cause-Effect, Conjunction, and Disjunction. The sentences at the terminal nodes of the tree are meant to be illustrative of the relationship of the node and where possible to be universally valid across cultural boundaries. The linguist technician is therefore encouraged to use them to elicit similar relationships in the language he is studying as a means of beginning sentence analysis. In some cases where our suggested example fails to elicit the same relationship, a more culturally valid example could be substituted. Example 11a should be universally valid as a Condition-Consequence relationship, except of course, in cultures in which houses above the ground are unknown. In such a case, perhaps "cliff" could be substituted for "roof."

1. Cause-Effect Relationships (A--$\geq$B).

We will now go through the tree (Figure 5) from right to left explaining our use of semantic labels and commenting on the relationships we have noted. The first division in our tree is between Cause-Effect and Non-Cause-Effect type relationships. It is interesting to observe that by means of a transform battery, the whole range of Cause-Effect relationships (plus some others) can be generated from a single Conditional sentence. Note the following battery:

11a) If you step off the roof you will fall.
11b) Step off the roof and you will fall.] Condition-Consequence.

12) Had he stepped off the roof he would have fallen. Contrafactual.

13a) He stepped off the roof so/therefore he fell.
13b) Because he stepped off the roof he fell.] Reason-Result.

14) In order to fall he stepped off the roof. Purpose-Result.

15) The quicker you step off the roof, the quicker you will fall. Proportional.

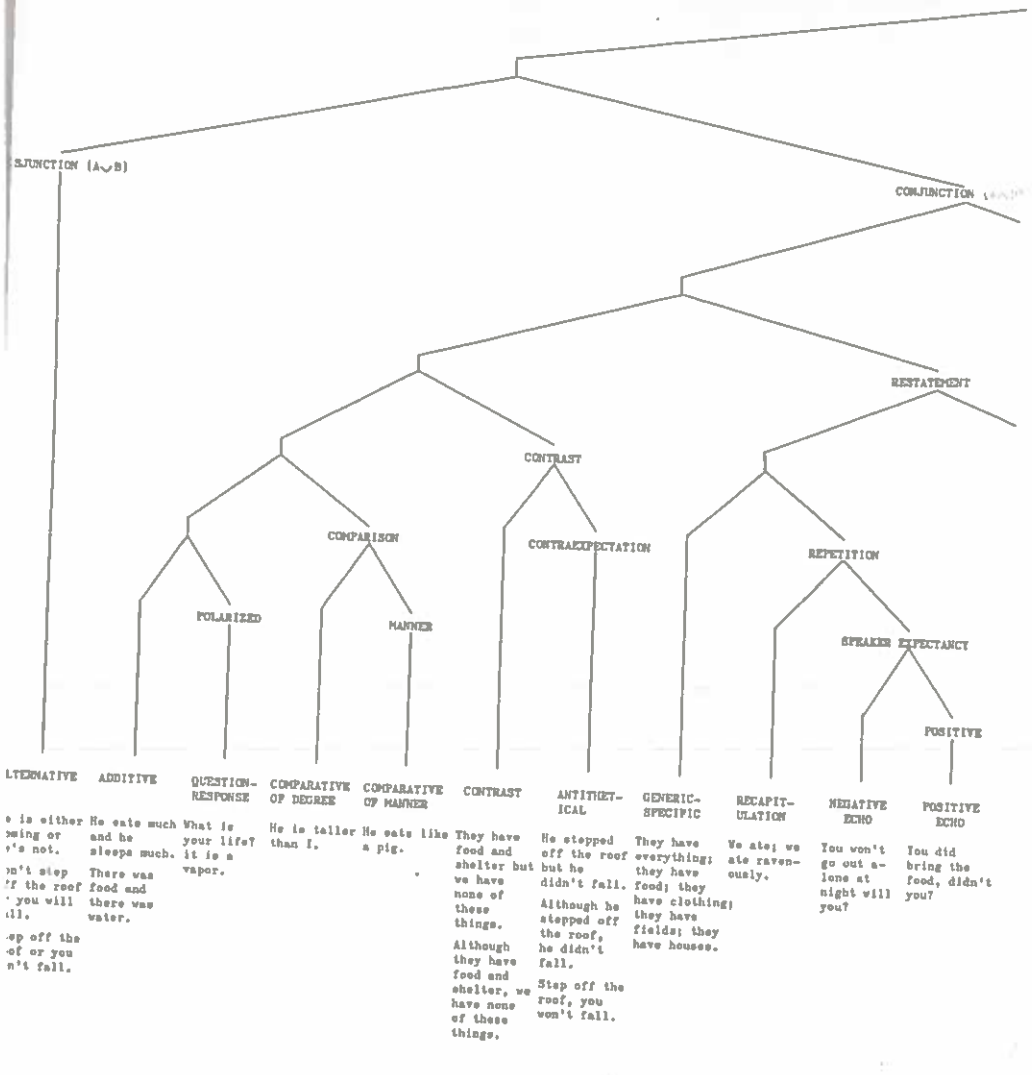
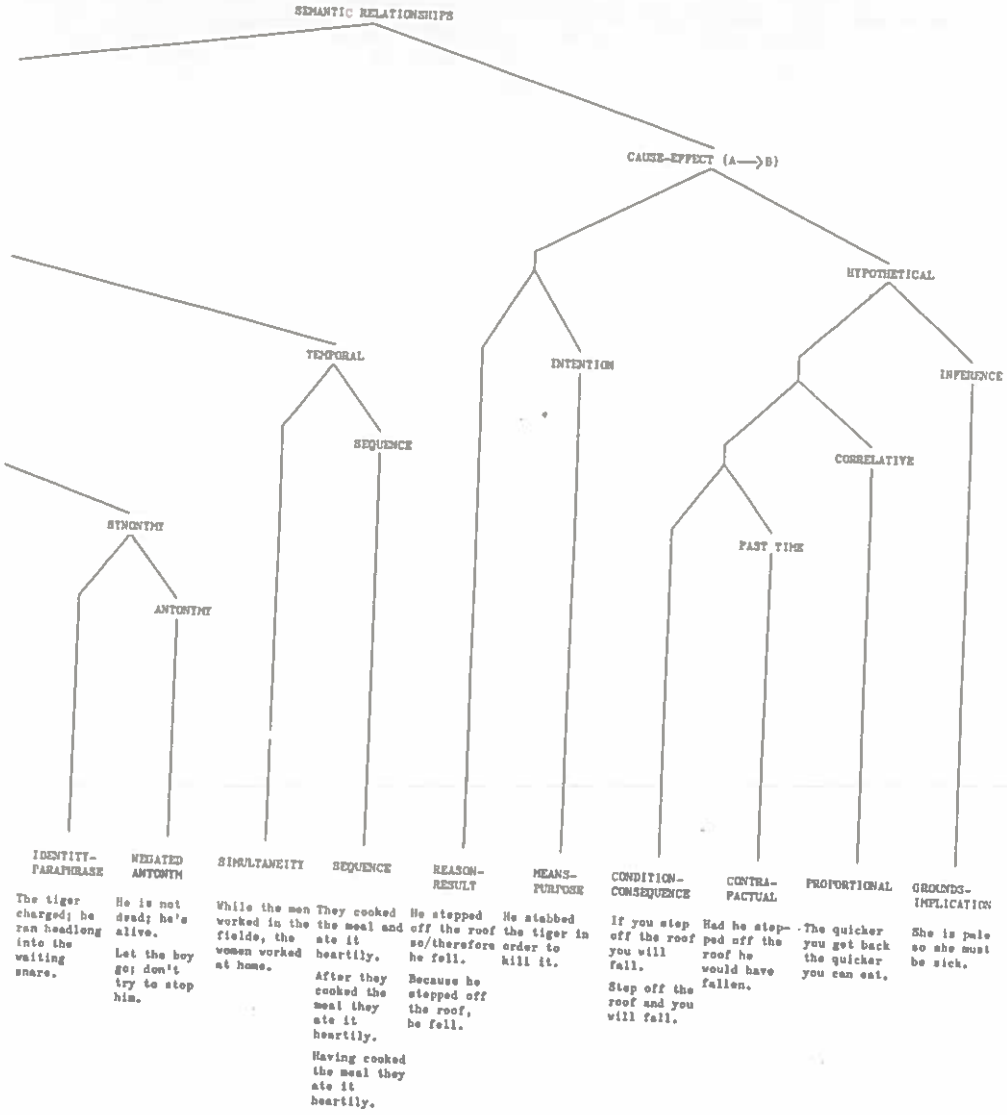


Figure 5. Semantic Relations Between Whole Propositions in English.



16) He stepped off the roof so he must have fallen. Grounds-Implication.

17a) He stepped off the roof and then he fell.
17b) After he stepped off the roof he fell.] Sequence.

18a) He stepped off the roof but he didn't fall.
18b) Although he stepped off the roof he didn't fall.
18c) Step off the roof, you won't fall.] Antithetical.

19a) Don't step off the roof or you will fall.
19b) Step off the roof or you won't fall.] Alternative.

The fact that we have been able to include all of our terminal nodes under Cause-Effect as transforms of one kernel conditional sentence gives us good reason to include them all under the general heading of Cause-Effect. We will further defend this choice as we consider each individual sentence relationship. Examples 18 and 19 are not considered cause-effect and will be commented on under Antithetical and Alternative. Example 17 could be considered cause-effect perhaps because of the strong cause-effect relationship which underlies it, and the close relationship between temporal sequence and logical (cause-effect) sequence. In such cases where it could be classified as either, the context must be the final arbiter as was noted in Example 4 above.

Grounds-Implication. The first division under Cause-Effect is labeled hypothetical. By this we mean that the sentences under this node are up for proof. Nothing in them indicates that they have occurred; they come under the rubric of prediction and supposition. The sentence type Grounds-Implication falls under the inference node. It is interesting to note that this type is actually the second premise and conclusion of an inference argument, such as:

20) All pale people are sick.
She is pale.
So she must be sick.

The first premise is taken as an implicit underlying cause of the final conclusion. In the sentence however, since the first premise of the argument is omitted, the Grounds becomes inferential cause by proxy. In order to elicit the Grounds as the case in the mind of the speaker, the question must be asked, Why do you think she is sick? Answer: Because she is pale. It is this element of thought, inference, or conclusion which characterizes this sentence relationship.

21) She is pale so (I think, infer, conclude that) she must be sick. Grounds-Implication.

The sentence is not a statement of fact, but merely a statement of the speaker's opinion which can be disproved.

Proportional. The Proportional sentence comes under the semantic

notion of correlativity by which is meant that one proposition varies in degree or quality either in direct or inverse proportion to the other proposition.

22) The quicker you return, the quicker you can eat. Direct Proportion.

23) The more I tell you the less you obey me. Inverse Proportion.

There may be some question about the validity of including this sentence under the Cause-Effect heading. If the question is asked, What will cause you to eat quickly? the answer is, My quick returning. And likewise to the question, What will be the result if you return quickly? the answer is, I will be able to eat quickly. These indicate that the underlying relationship between the two is cause-effect.

Condition-Consequence. The cause of this relationship is set forth as provisional, the effect of which will only occur provided that the cause is realized. The sentence is therefore always set in an unrealized or subjunctive mode.

24) If you step off the roof you will fall. Condition-Consequence.

An interesting feature about this type is that it requires that both of its propositions be either positive or both negative in cultural or situational value. We will illustrate presently what we mean by this. It may be true of all cause-effect sentences and if so would lead us to conclude that only good causes underlie good results and bad causes, bad results. Notice what happens if we put a negative into the condition of Example 24.

25) If you don't step off the roof you won't fall.

We were compelled to match the don't of proposition one with a won't in proposition two. This feature is a subtle one and some might object on the basis that you can say the following sentence which seems to be negative-positive.

26) If you don't talk too much people will like you.

But the relationship is still positive to positive since talk too much has a negative cultural value which is negated making it a positive. Note that conjecture, not fact, is involved in this relationship.

The second example of Condition-Consequence noted in our cause-effect battery, Example 11b (Step off the roof and you will fall), is a subtype of the Conditional sentence in which the speaker expects the hearer to be familiar with the information given. He gives it as a reminder, caution, or warning.

Contrafactual. This pair is merely a Condition-Consequence sentence viewed from the present as having already happened or as it turns out, as

having not happened. In the mind of the speaker the truth value of his assertion is actually the opposite of what is stated. Therefore the actual truth of:

27) Had he stepped off the roof, he would have fallen. Contrafactual.

is, He did not step off the roof and he didn't fall. His assertion however, is merely conjecture, based on laws of cause-effect or culturally determined expectancy patterns, and is not as such a statement of fact.

Means-Purpose. There are two ways of looking at this relationship—the one indicates that it is cause-effect, the other that it is effect-cause.

28) He stabbed the tiger in order to kill it. Means-Purpose.

Is the Means (the stabbing of the tiger) the cause of an intended effect, or is the Purpose (in order to kill it) the cause of the action portrayed in the Means proposition? In reality intention always precedes action and constitutes the underlying cause of any intermediate means. Note that in this relationship we are given only the intention and the means and not the final result. If we ask, What was the cause of his stabbing the tiger? we get the reply, Because he wanted to kill it. If we in turn ask, What resulted because he wanted to kill the tiger? we get, He stabbed it. This seems to firmly establish the Purpose proposition as the cause and the Means as effect in this sentence type.

Note that it is not permitted to ask, What was the cause of his killing the tiger? because in our original Means-Purpose sentence he did not yet kill it. Nor are we permitted to ask, Why did he want to kill the tiger? since the answer (Because he did not want it to kill him), takes us out of the domain of our original sentence and is therefore not valid as proof of anything.

The semantic feature that distinguished this sentence is intention or desire. Note the frequent use of want in the questions and answers about it above. We move with this sentence type out of the domain of conjecture into statement of fact.

Reason-Result. This is the most clearly cause-effect of all of the cause-effect relationships. It can be encoded with any of three grammatical signals—because, so, or therefore.

29a) He stepped off the roof so/therefore he fell.
29b) Because he stepped off the roof, he fell.] Reason-Result.

Of the six cause-effect patterns given, only Grounds-Implication and Proportional reject permutation of their two propositions. If the propositions of these two are permuted it results in a change of sentence pattern.

30) He is pale so he must be sick. ⟹
So he must be sick, he is pale.*
He must be sick because he is pale.

31) The quicker you return the quicker you can eat. ⟹
The quicker you can eat, the quicker you return.*
If you want to eat quickly, you must get back quickly.

2. Conjunction ($A \wedge B$).

The first node we encounter under Non-Cause-Effect is conjunction which in logic includes both the notions of and and but. That is, it includes both coupling and contrast. We have also included under this node the features of time and restatement.

2.1 Temporal.

Temporal relationships can be divided into the broad categories of Sequence and Simultaneity.

32a) They cooked the meal and ate it heartily.
32b) After they cooked the meal they ate it heartily.
32c) Having cooked the meal they ate it heartily.] Sequence.

33) While the men worked in the fields the women worked at home. Simultaneity.

The subcategories of pure sequence versus overlapping sequence, and of coterminus simultaneity versus inclusive simultaneity, are not shown in the tree. In pure sequence, one action follows the other with no overlap whereas overlapping sequence permits the second to begin before the first has finished. Coterminus simultaneity requires that both actions begin and end at precisely the same time whereas inclusive simultaneity merely requires that the time span of one be included within the time span of the other.

It is in this area of simultaneity that some have distinguished a Circumstantial relationship, in which one proposition forms the circumstance, setting, or situation under which the other occurs. This may be a real distinction especially if we say that we have this relationship if and only if the first proposition is a state, not an event.

34) While the weather continued fair, the men continued to work.

We have likewise not included this distinction of simultaneity in the tree.

2.2 Restatement.

Restatement is a conjunctive relationship in which one proposition repeats or restates, either verbally or conceptually, part or all of

another and modifies it in some way. The test for a restatement relationship is, Can you insert the words, "That is," between the propositions and still retain the original sense of the sentence.

Negated Antonym and Paraphrase. The first node under restatement is synonomy which requires that the two propositions be synonomous either by negating an antonym of one of the constituents of the other or by providing a synonym for one of the constituents of the other. This constituent in both cases is typically and possibly obligatorily the predicate.

35) He is not dead; he is alive. Negated Antonym.

36) The tiger charged; he ran headlong into the waiting snare. Paraphrase.

Positive and Negative Echo Questions. The two echo questions qualify as restatement sentences in that the second proposition restates the first in the form of a formulaic truncated question with the added semantic component of speaker expectancy. In the Positive Echo, the speaker uses a positive statement in the first proposition coupled with a negative statement in the second to indicate that he expects a positive answer. In the Negative Echo he uses a negative statement in the first proposition and a positive statement in the second to signal that he expects a negative answer.

37) You did bring the food, didn't you? Positive Echo.

38) You won't go out alone at night, will you? Negative Echo.

We have included these under the repetition node because the tag question elliptically repeats the first proposition in the form of a pro-verb (in Example 37 the pro-verb is did; in Example 38 the pro-verb is will).

Recapitulation. Recapitulation is a restatement sentence requiring that at least the Actor or Undergoer and the Predicate of one proposition be repeated by the second proposition.

39) We ate; we ate ravenously. Recapitulation.

Generic-Specific. This is a restatement relationship in which one generic proposition is restated in the form of one or more specific propositions.

40) They have everything; they have food; they have clothing; they have fields; they have houses. Generic-Specific.

2.3 Contrast.

The two relationships coming under the semantic notion of contrast—

Antithetical and Contrast—are closely related to each other in both form and meaning. They are both a subclass of contrast—the one stemming from an expectancy pattern which is countered; the other from a comparison of two opposing situations. We have labeled the first Antithetical and the second Contrast.

Antithetical. The first of these involves what Robin Lakoff (1971 p. 135) calls, "an assymetric use of but" (because the two propositions cannot be permuted).

41a) He stepped off the roof but he didn't fall.] Antithetical.
41b) Although he stepped off the roof, he didn't fall.]

Cause-effect is involved in this type and forms the basis for the expectancy pattern underlying the contrast. We have not included Antithetical under Cause-Effect, however, because no Why-question will elicit either proposition as the cause. The relationship is rather one of contrast between a thesis and an antithesis. This becomes clear when the sentence is paraphrased as follows:

42) He stepped off the roof but in contrast to what you are thinking, he didn't fall.

Returning to Example 18c (Step off the roof, you won't fall) we classify it as a form of the Antithetical relationship. Depending upon the situation in which it is spoken, this subtype can vary from a dare to an encouragement. It is often used by parents or instructors to inspire children or students to undertake an unfamiliar action.

43) Take a deep breath and relax on the water, you won't sink.

Note that this sentence may be paraphrased, Take a deep breath and relax on the water; in contrast to what you think, you won't sink.

Antithetical includes Longacre's Expected Consequent Antithetical and Consideration Which Counter-Balances Antithetical (1970 p. 797).

Contrast. This type requires that two constituents of one proposition be compared or contrasted with two of the other.

44a) They have food and shelter but we have none of these things. Contrast.
44b) Although they have food and shelter we have none of these things.

Note that they and food and shelter are contrasted with we and none of these things. Contrast includes Longacre's Denied Alternative Antithetical (1970 p. 797). It corresponds to Robin Lakoff's "symmetrical but" (1971 p. 135), in that the propositions may be permuted.

In both Antithetical and Contrast sentences, although functions as a paraphrase of but. The question arises then, Is it always a para-

phrase of but? We have noted two situations in which it is not. The first is where we have a negated antonym in one proposition and an antonym in the other.

45) He is not dead but he's alive.

46) Although he is not dead, he is alive.*

The reason that the although paraphrase does not apply here is that although functions to contrast degrees or gradients of an absolute, but not synonomous constituents (not dead and alive are here synonyms). But, on the other hand, is able to completely ignore the not and function to contrast the antonyms dead and alive. Note, however, what happens when we modify one of the absolutes, making it a relative term.

47) Although he is not dead, he is barely alive.

Now the although functions because it is serving to contrast degrees of death--dead versus barely alive. This difference between but and although was suggested by Longacre (1967 p. 19).

The second situation where the two contrast is with deleted information. But permits deletion of the Result proposition of an embedded Reason-Result sentence whereas although does not permit it.

48) I was going to the store but Kenny got sick.

49) Although I was going to the store, Kenny got sick.*

Although refuses to function as long as the result of Kenny's sickness remains implicit. But note:

50) Although I was going to the store, Kenny got sick so I couldn't.

2.4 Non-Contrast.

Comparative of Manner and Degree. The first label under the Non-Contrast node is comparison which requires that the two propositions be related to each other by positive resemblance of either manner or degree.

51) He eats like a pig. Comparative of Manner.

52) He is taller than I. Comparative of Degree.

While in English these may not qualify as two whole propositions on the surface, certainly two whole propositions are involved in the deep structure. In an another language they may surface as two, as for example, As a pig eats so he eats.

Question-Response. This relationship falls under the node labeled polarized. It is polarized in the sense that one proposition is minus, the other plus; one is stimulus, the other response. We are not focussing on the Question-Response found in dialogue but rather on the rhetorical device used in monologue.

53) What is your life; it is a vapor. Question-Response.

Additive. It is difficult to join two propositions together in a purely semantic coupling or additive relationship. One would think that and would do this for us quite simply. But notice the three following sentences all joined with and but none of them additive in relationship.

54) The police came in and everyone swallowed their cigarettes. Sequence.

55) Step off the roof and you will fall. Condition-Consequence.

56) He will do the theoretical work and she will do the practical. Contrast.

In an earlier draft of this paper we tried to join two events widely separated in semantic domain with and in an attempt to show that it could be done. Our sentence was:

57) He will go and the sun won't shine.

Reaction to the two propositions by others however, was that there was a cause-effect relationship between them—that is, He will go and (he is such a sourpuss that) the sun won't shine.

Even without and events linked together tend to take on a cause-effect or sequential relationship. Note:

58) I came; I saw: I conquered.

However, where two events or states are coupled together with only one constituent of each which is varied, a true semantic additive relationship is obtained.

59) There was food and there was water. Additive.

60) He eats much and he sleeps much. Additive.

If we vary two constituents, the relationship becomes one of contrast—He eats much and he sleeps little. Here eating is contrasted with sleeping and much with little.

The same relationship is signaled by the discontinuous links both...and and neither...nor. Whereas both...and permits only two propositions, the Additive sentence is typically open-ended (that is, permits two or more propositions).

3. Disjunction (A ∨ B).

The semantic notion that characterizes this relationship is choice. This choice is either between the positive and negative aspect of the two predicates involved, between situational opposites, or between corresponding constituents of each proposition. They are illustrated as follows:

61) He's either coming or he's not coming. (Positive-Negative).

62) He's either sleeping or he's eating. (Alternate Predicates).

63) Did Brad eat the pie or did Darryn? (Alternate Actors).

64) Do you walk to work or do you carry your lunch?*

65) Do you walk to work or do you take the bus? (Situational Opposites).

The latter two illustrate the need for situational opposites in the Alternative sentence. Since you can both walk to work and carry your lunch at the same time, they do not qualify as alternatives. The sense is rectified when a mutually exclusive activity to walk to work is introduced such as take the bus. The same would be true of:

66) Do you carry your lunch or buy it at the cafe?

The feature of choice is also seen in our transform of the Conditional sentence, If you step off the roof you will fall.

67) Don't step off the roof or you will fall.

The choice here is subtle, but is between obedience and consequences, which are again mutually exclusive. We have classified this sentence with Alternative rather than Cause-Effect because the supposed result you will fall, is the result of stepping off the roof, not of not stepping off the roof as the sentence commands. This is seen if the sentence is paraphrased as follows, Don't step off the roof because if you do you will fall. In our alternative sentence the or takes the place of because if you do. The basic relationship then is choice between obedience and disobedience with consequences.

Mutual exclusion is not the only feature which characterizes disjunction along with choice. Choices can be presented in the form of a list, one or more of which may be selected.

68) We will go by bus, or by jeep, or if things are really bad we will walk.

D. Relationship of Surface to Deep Structures.

Tagmemicists have always been interested in this problem basically because the tagmeme is a form (surface)-meaning (deep) composite. Sentence structure has been an especially good area in which to study this relationship perhaps because of the obvious discrepancy between the two.

Mary Ruth Wise in her paper on Palikur (1971) has contributed much to this problem. She has charted the two categories in the form of a matrix the deep (semantic) structures forming the vertical dimension and the surface (grammatical structures forming the horizontal dimension. Two salient features which emerged from her study were that, "...the deep structure relation between actions may remain invariant through variant surface structures, or the surface structure may remain invariant through variant deep structure relations," and that, "Within a discourse...the boundaries of deep structure sentences and surface structure sentences are not always co-terminous."

Another conclusion which can be drawn from our study is that the relationship between surface and deep is arbitrary and therefore language specific. That is, given a certain deep structure relationship, it is impossible to predict with accuracy what its surface encoding will be. For the single deep relation of Sequence, a speaker of English has a choice of at least three contrasting surface forms.

68) They cooked the meal and ate it. Coordinate (Base-Link-Base).

69) After they cooked the meal, they ate it. Subordinate (Relator-Axis-Base-Base).

70) Having cooked the meal they ate it. Subordinate (Participial Base-Base).

In Tamang a speaker would have a choice of the two Subordinate structures noted for English but has no Coordinate choice. In Palikur a speaker would have the same Subordinate choice, but his Coordinate choice would be a paratactic Base-Base construction.

Having noted this, there are some general conclusions which can be drawn which indicate that the relationship between surface and deep may not be completely arbitrary. We will note these presently but first would like to discuss the means we used to study this relationship.

We have attempted to keep these two categories separate, but still to take both into consideration when determining structure. Again Wise's Palikur article pointed us in the right direction for keeping the two in proper balance. For the specific method of mapping the two together in a single chart which we have used I am indebted to Ray Christmas whose paper, Sentence Patterns in Kupia, appears in this volume. The method is simply to construct a tree of the semantic relationships existing in a

language similar to the one in Figure 5. The terminal nodes of this tree then, instead of being listed side by side, sink into a three or four level grammatical grid to the level appropriate to the structure of each. The three levels are basically Coordinate and Subordinate with Coordinate divided into linked versus paratactic structures. If subordinate is similarly divided, it is between those structures whose dependent half is participial in form and those whose dependent half is made so by the presence of a relator.

We have thereby relegated to surface structure only these four categories. The first question we ask when determining grammatical status is, Is it a relationship between structures of equal grammatical status (either independent or dependent) or not? If so we label it Coordinate. If it is Coordinate and there is a link joining the two, we assign it to the Base-Link-Base division, otherwise to the Base-Base division. If the relationship is between constructions of unequal grammatical status we label it Subordinate and then assign it to either the participial or axis-relator class. Participial structures tend to be static verb forms whereas relators may allow the verb form to vary. Participial endings typically occur exclusively on verbs while relators tend to be more free to occur with either nouns or verbs. Certainly our grammatical grid could be finer, but we have cut off at this point feeling that it is sufficiently fine to be readily usable and to show up pattern from language to language.

Each sentence paper in this volume contains such a display showing the interplay between deep and surface for its own language. The Halbi and Maithili papers (the latter is included in Hale 1973, Vol. I) also contain these displays in reverse in which the tree is composed of grammatical criteria while the grid receiving the terminal nodes is semantic. Alice Davis, author of the Maithili paper, has used the two displays to establish contrast between sentence types. She reasons as follows: "In order to establish contrast between sentence types, following the tagmemic form-meaning composite standard, we require that each sentence type must appear on a separate branch of both the Semantic Tree and the Grammar Tree. If two types emanate from the same terminal branch on either one of the trees, they are considered as subtypes. Thus, although the Reason sentence types appear in three different places on the Grammar Tree, they are classes as sub-types because they all emerge from the same branch on the Semantic Tree."

Ray Christmas has done a similar thing in constructing a matrix of grammatical differences (Figure 3 in the Kupia paper), in addition to his semantic tree. He then insists that a sentence type must have at least one grammatical and one semantic difference to qualify as a contrastive type.

We now present the dual structure displays of six languages minus the super structure of the Semantic trees (Figures 6-11). That is, merely the four-layer grammatical grid and the terminal nodes of the Semantic trees will be presented for each language. This will allow us

to observe all the languages together with their various grammatical encoding patterns, and enable us to draw conclusions about their similarities and differences. From these then we may be able to abstract something more about the relationship of surface to deep in general.

Four of the languages are Indo-Aryan (Kupia, Halbi, Maithili, and Nepali), so we may expect some similarities of grammatical encoding patterns among them. One is Tibeto-Burman (Tamang), and the other is an Arawakan language of Brazil (Palikur). We have put the sentence types of Palikur, as presented by Wise and Green 1971, into our format in order to give more diversity to our comparison. In doing so we assume responsibility for assigning the types to the broad semantic categories of Cause-Effect, Conjunction, Restatement, Coupling, Complementation, Disjunction and Temporal. We have had to do this also for Nepali since it was not presented in this format. (If we have misrepresented either language it has not been intentional.) Except for one or two types, the assignment was sufficiently straight forward to be without question. For some of the languages it was necessary to decide as well the exact grammatical status of a type since all of the sentence papers in this volume used only a three-level grammatical grid. The languages are grouped together according to language family, the four Indo-Aryan languages being listed first.

We can make the following general observations about these displays:

a) Cause-effect relationships tend to encode as subordinate structures. Palikur is an exception to this statement but even then it has several of its Cause-Effect sentences encoding as subordinate.

b) Disjunction relationships almost uniformly encode as coordinate structures with a link. Palikur is the sole exception to this, its Disjunctive sentence being a paratactic structure.

c) Restatement relationships tend to be paratactic in form. The items not so labeled but qualifying as Restatement in the Tamang, Nepali, and Palikur displays are Paraphrase and Generic-Specific. (These types will be found grouped under the semantic category of Conjunction in these three languages.)

d) Conjunctive relationships tend to encode as coordinate formations. This includes the terms Coupling and Complementation.

e) Temporal relationships are largely subordinate in structure. This may be due to their affinity to Cause-Effect relationships.

While it is true that there is a great deal of similarity across the three language families (Arawakan, Indo-Aryan, and Tibeto-Burman), this may not be entirely unexpected. Tamang has been under the strong influence of Indo-Aryan (Nepali) for some time and we could dismiss the similarity with Arawakan as coincidence. It is evident that we need a much wider sampling of languages and language families before any firm

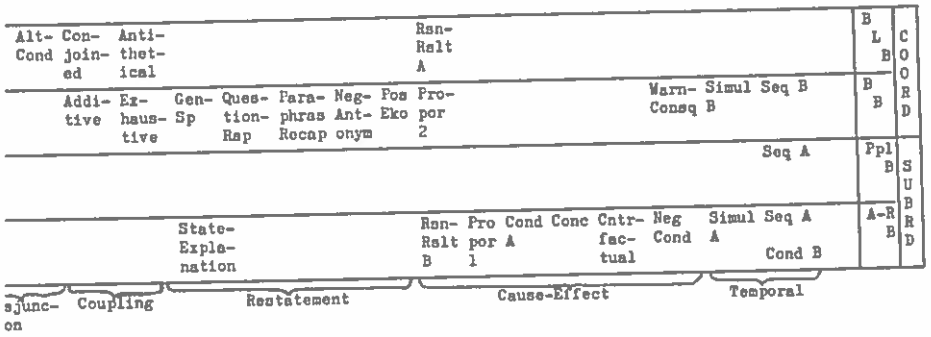


Figure 6. Kupia Dual Structure Display.

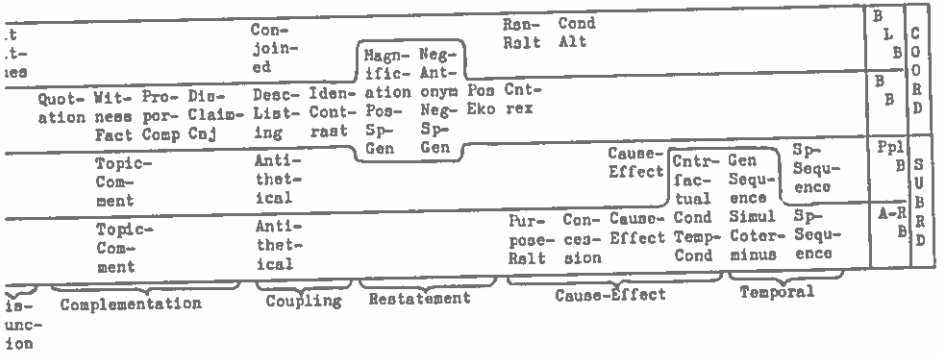


Figure 7. Halbi Dual Structure Display.

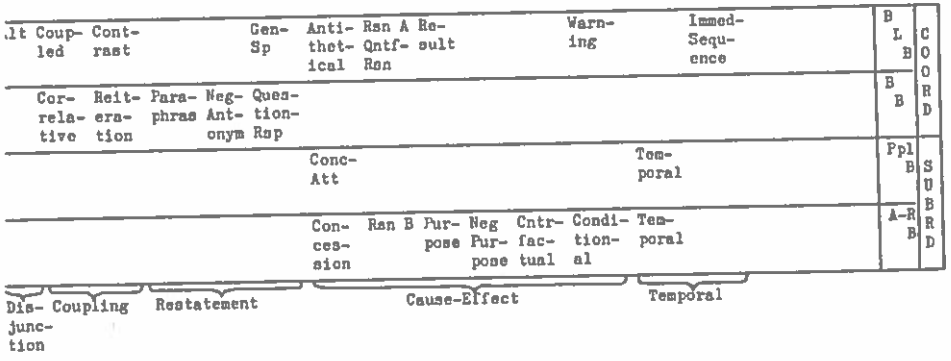


Figure 8. Maithili Dual Structure Display.

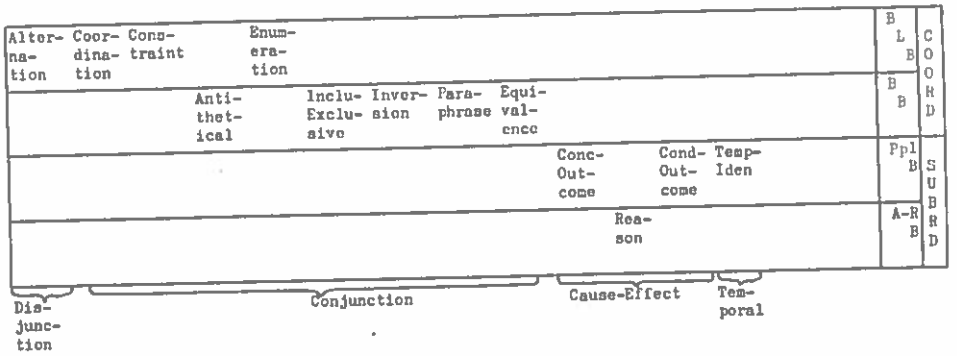


Figure 9. Nepali Dual Structure Display.

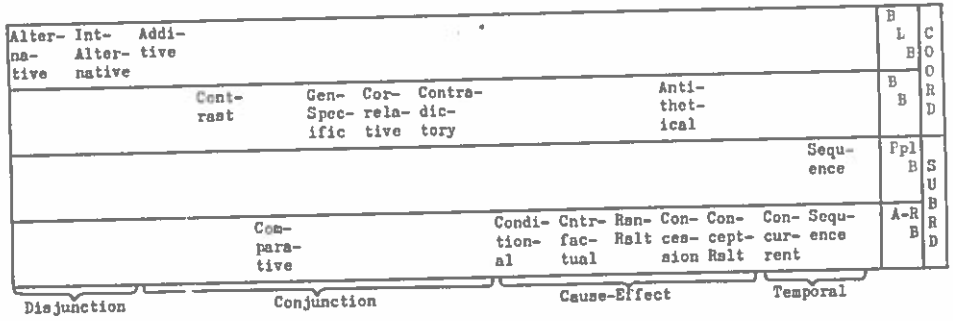


Figure 10. Tamang Dual Structure Display.

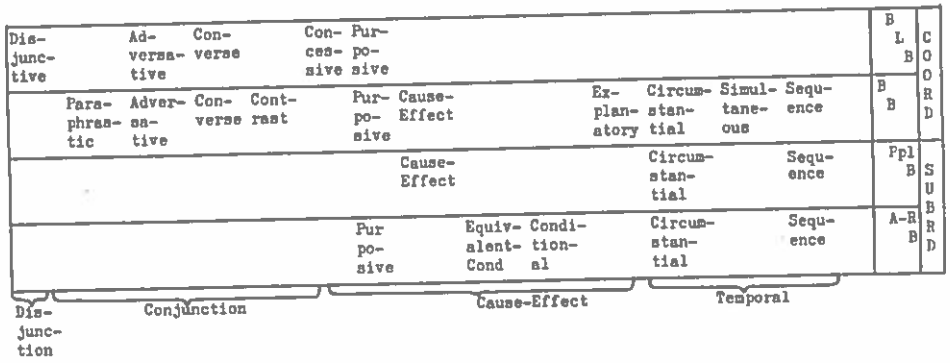


Figure 11. Palikur (Arawakan) Dual Structure Display.

conclusions can be drawn. Perhaps by making our grammatical grid finer and our semantic domains more sharply defined we would get more contrastive patterns from language to language. Our hunch is that language families will display marked tendencies towards uniformity of encoding patterns from deep to surface and that this uniformity will be a contributing factor to enable us to more exactly classify a language. While semantic notions seem to definitely point toward a universal base, it is the grammatical encoding patterns which need further study as do the relationships between them. As the study of semantic universals is proving fruitful, we are encouraged to believe that the study of grammatical encoding patterns and their relationships to semantic notions will as well.

ABBREVIATIONS

Alt	Alternative
Anti	Antithetical
A-R B	Axis-Relator-Base Base
Att	Attributive
BLB	Base Link Base
BB	Base Base
C-E	Cause-Effect
Cnj	Conjecture
Cntr	Contra
Cntrex	Contraexpectation
Comp	Comparison/Comparative
Cond	Conditional
Coord	Coordinate
Consq	Consequent/Consequence
Desc	Descriptive
Eko	Echo
Gen	Generic/General
Iden	Identity
Immed	Immediate
Inclu	Inclusive
Int	Interrogative
Loc	Locative
Neg	Negative
Para	Paraphrase
Pos	Positive
Ppl B	Participial-Base Base
Propor	Proportional
Ques	Question
Qntf	Quantified
Recap	Recapitulation

Rslt	Result
Rsn	Reason
Seq	Sequence
Simul	Simultaneous
Sp	Specific
Temp	Temporal

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Sentence Patterns in Halbi

Fran Woods

A. Introduction.

Halbi is the lingua franca of the Bastar District in the interior of the state of Madhya Pradesh, India. According to the 1961 Census of India there are 300,000 native speakers of the language. Halbi belongs to the Indo-Aryan family of languages and is closely related to Oriya, Hindi, and Marathi.

As a member of the Summer Institute of Linguistics working under the auspices of Deccan College, Poona, the author commenced research in Halbi in 1967. Between 1967 and 1969 the author and a co-worker, Miss Betsy Schuyler, lived in the village of Bhatpal in Bastar District. The present analysis is based on the language as spoken in Bhatpal village.

The author is particularly indebted to Mr. Chingaru Ram Murea, Mr. Durga Ram Murea, and Mr. Lula Ram Murea, all of Bhatpal village, for their able assistance in sorting out the intricacies of their language; and to my co-worker, Betsy Schuyler, for her continuing interest and encouragement. The author is also indebted to Dr. Kenneth L. Pike, Dr. Ronald L. Trail, Dr. Robert E. Longacre, and other members of the Summer Institute of Linguistics for their stimulation in working on the sentence in Halbi.

It is the author's view that a sentence is basically composed of either one proposition (clause) with its peripheral elements, or two or more propositions (clauses) with only one primary relationship, plus periphery. Focusing on the latter aspect the purpose of this paper is to describe the sentence structure of Halbi. Leaving the description of one-proposition-sentence at this point, we focus on sentence as grammatically a level of clause combination and semantically a level of proposition combination. The interplay of these two features is what we have used to arrive at the twenty-nine sentence types here posited.

The first section of the paper describes the general grammatical structure of the sentence in Halbi and includes a description of sentence nucleus and sentence periphery. The contrastive sentence types are then incorporated into two trees. The first tree is a semantic or propositional relationship tree where each node is a contrastive semantic feature. The second tree is a grammatical structure tree where each node is a contrastive grammatical feature.